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<table>
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<tr>
<th>Product Name:</th>
<th>ASUS V7700 Series</th>
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<td>Manual Revision:</td>
<td>1.00 E543</td>
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<td>May 2000</td>
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Federal Communications Commission Statement
This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:
  • This device may not cause harmful interference, and
  • This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer’s instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  • Reorient or relocate the receiving antenna.
  • Increase the separation between the equipment and receiver.
  • Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
  • Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

Canadian Department of Communications Statement
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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I. Introduction

Thank you for purchasing an ASUS AGP-V7700 GigaTexel Shader Graphics Card. With this purchase, you join an elite squadron of graphics enthusiasts.

Powered by the NVIDIA™ GeForce2 GTS™ graphics processing unit (GPU) and featuring DDR (Double Data Rate) memory, the ASUS AGP-V7700 delivers not only cutting-edge graphics performance but also image fidelity regardless of the CPU (central processing unit) your computer system is using.

With the ASUS AGP-V7700, you will not only see but also experience dynamic, realistic 3D worlds and characters.

Highlights

- Powered by the World’s First Per-Pixel Shading Graphics Processing Unit (GPU)  
  NVIDIA™ GeForce2 GTSTM
- Built-in 32/64MB DDR video memory with up to 5.3GB/sec bandwidth
- Sets a new milestone for realism
- Dual-texture pixel-fill capacities with four new Hypertexel pipelines
- Performs up to 3x improvement over GeForce™
- 1.6 Gtexel fill rate, 25 Mtriangles/sec through T&L/Setting
- ASUS SmartDoctor™ Technologies
- Provide the greatest security to your valuable system
- Optimized for DirectX® 7 and OpenGL® Features
- Ensures broad application support

Available Model

ASUS AGP-V7700

- 32/64MB DDR Frame Buffer
- VGA (ASUS VR-100 Upgradeable)
I. Introduction

Features

- AGP 4X/2X with Fast Writes
- Four new Hypertexel pipelines process two texture per pixel, in true color, at full speed up to 1.6 Gtexel fill rate
- Built-in 32MB high speed DDR video memory with up to 5.3GB/sec bandwidth
- Eight texture mapped, lit pixels per clock cycle
- Second generation Transform and Lighting (T&L) Engine
- Up to 25 million triangles per second at peak rates
- Optimized for Direct3D acceleration with complete support for DirectX 7 features, such as multi-texturing, bump mapping, light maps, reflection maps, full scene anti-aliasing, trilinear and 8-tap anisotropic filtering (better than trilinear mipmapping)
- Fully 1.2 compliant OpenGL support
- 32-bit colors, Z/stencil buffer
- Multi-buffering (double, triple, quad buffering) for smooth animation and video playback
- Multiple video windows with hardware color space conversion and filtering (YUV 4:2:2 and 4:2:0)
- Integrated 350MHz RAMDAC supporting from 640x480 up to 2048x1536 in true color
- BRDF (Bidirectional Reflectance Distribution Function) support
- Video acceleration for Direct Show and MPEG-1, MPEG-2, and Indeo
II. Installation

ASUS AGP-V7700 Layout

32/64MB Frame Buffer

NVIDIA™ GeForce2 GTS+ GPU

Chip with Fan

VGA Output

ASUS AGP-V7700 Graphics Card

ASUS V7700 Series Driver & Utility CD Disc

Item Checklist

ASUS V7700 Series User’s Manual
II. Hardware Installation

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II. Hardware Installation

ASUS VR-100 Optional Upgrade Kit

The ASUS VR-100 Optional Upgrade Kit enables the ASUS VR-100G 3D Glasses to be used with Pure models of the V7700 Series cards. See your dealer for more information on the ASUS VR-100 Optional Upgrade Kit.

The monitor cable that came with your kit may be of the Y- or standard type. Connect your cable accordingly.

Y-Type Connection

When using a Y-type cable, you do not need to connect the VGA Input of the VR-100 to your VGA card’s monitor output (see diagram above).

Standard Connection

You must anchor the ASUS VR-100’s mounting bracket with a screw to a free expansion slot in your computer chassis.
II. Hardware Installation

**NOTE:** This graphics card series can only be installed in motherboards with an AGP slot.

**WARNING!** Computer boards and components contain very delicate Integrated Circuit (IC) chips. To protect the computer board and other components against damage from static electricity, you must follow some precautions.

1. Make sure that you unplug your power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.
2. Keep all components such as the host adapter in its antistatic bag until you are ready to install it.
3. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

### Installation Procedures

#### New Systems

1. Unplug all electrical cords on your computer.
2. Remove the system unit cover.
3. Locate the AGP bus expansion slot. Make sure this slot is unobstructed.
4. Remove the corresponding expansion slot cover from the computer chassis.
5. Ground yourself to an antistatic mat or other grounded source.
6. Pick up the board (still in its sleeve) by grasping the edge bracket with one hand and then remove the plastic sleeve.
7. Position the card directly over the AGP slot and insert one end of the board in the slot first. Firmly but gently press the bus connector on the bottom of the card down into the slot. Be sure the metal contacts on the bottom of the host adapter are securely seated in the slot.
8. Anchor the board’s mounting bracket to the computer chassis using the screw from the slot cover that you set aside previously.
9. Replace the cover on the system unit.
10. Connect your analog monitor’s 15-pin VGA connector to the card and fasten the retaining screws (if any).
11. Connect other cables and devices if available - You are now ready to install the software drivers and utilities.

#### Systems with Existing VGA Card

1. Change your display driver to Standard VGA.
2. Shut down your computer and unplug all electrical cords.
3. Replace the existing VGA card with your graphics card.
4. Restart your computer.
5. Install the ASUS V7700 series display driver.
III. Windows 98

Operating System Requirements

**NOTE:** This graphics card requires a motherboard with an AGP slot.

**Windows 98**

Windows 98 supports full Direct3D and AGP features. If you are still using the beta version of Windows 98 and you want to fully take advantage the Direct3D and AGP features, you must upgrade your current Windows to the release version before installing the AGP display driver.

Windows 98 includes VGARTD for the major chipsets but it is recommended that you install VGARTD from the ASUS AGP-V7700 Series CD to make sure that you have the latest version of VGARTD (see [III. Windows 98 | Install GART Driver](#)).

**NOTES**

- VGARTD stands for Virtual Graphics Address Remapping Table Driver, which is necessary to use the DIME feature of AGP. DIME means Direct Memory Execute, which is accessed directly by most AGP chips (when VGARTD is installed) for complex texture-mapping operations.
- For other notes or release information, see the README files in the installation CD disc.
- This Manual assumes that your CD-ROM disc drive is drive D: and that Windows is in C:\WINDOWS. Replace either with the actual location, if necessary.
Driver Setup

You can use one of three methods to install the Windows 98 drivers for your ASUS AGP-V7700 series graphics card.

Method 2 and Method 3 will not install the appropriate AGP GART driver if your motherboard does not use the Intel AGPset. Installing the AGP GART driver will ensure that the AGPset’s AGP functions are available. Method 2 and Method 3 will not install also the DirectX runtime libraries. DirectX must be installed so that your video player can take advantage of hardware acceleration. See III. Windows 98 | Install GART Driver and III. Windows 98 | Install DirectX later in this manual for the setup steps.

NOTE: The screen displays in this manual may not reflect exactly the screen contents displayed on your screen. The contents of the support CD are subject to change at any time without notice.

Method 1: ASUS Quick Setup Program
(For Windows 98/Windows 2000)

NOTE: See III. Windows 98 | Drivers | Install Display Driver for more information.

1. Start Windows.

2. Switch display to Windows’ Standard Display Adapter (VGA) mode and then restart Windows.

3. Insert the CD installation disc into your CD-ROM drive.

4. The ASUS Windows 98 Install Shell appears. Click Drivers and then click Install Display Driver on the Drivers dialog box.

5. Follow the onscreen instructions to complete the setup.

6. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click Yes... and then Finish to restart your computer and to complete Setup.
III. Windows 98

Method 2: Display Property Page
(For Windows 98)

1. Start Windows.

2. Switch display to Windows’ Standard Display Adapter (VGA) mode and then restart Windows.

3. Right-click the Windows desktop and click Properties.

4. Click the Settings tab and then click Advanced. The Standard Display Adapter (VGA) Properties dialog box appears.

5. Click Change on the Adapter tab. The Update Device Driver Wizard dialog box appears. Click Next, click Display a list of all the drivers... and then click Next.

6. Click Show all hardware and then click Have Disk.... When the Install From Disk dialog box appears, type the location of the ASUSNV9X.INF file and then proceed to step 9. Otherwise, proceed to the next step.

7. Click Browse to search the CD-ROM drive. In the Drives box of the Open dialog box, select your CD-ROM drive and then click OK.

8. In the Folders box, double-click the WIN9x folder and then select ASUSNV9X.INF in the File name box.

9. Click OK. A list of video cards appears. Select your VGA card type for your operating system and then click OK.

10. The Update Driver Warning box appears. Click Yes to confirm the setting up of the ASUS enhanced display drivers and then follow the onscreen instructions to start the setup.

11. Setup will prompt you when it has finished installing all the necessary files on your computer. Click Finish to close Setup.

12. When you are returned to the Standard Display Adapter (VGA) Properties box, click Close. The Display Properties box appears. Click Close.

13. The system will prompt you to restart your computer. Click Yes to restart your computer and to complete Setup.
III. Windows 98

Method 3: Plug and Play
(For Windows 98)

**NOTE:** Before proceeding with these steps, replace first your old VGA card with an ASUS AGP-V7700 series graphics card.

1. Start Windows.

2. When Windows detects your ASUS AGP-V7700 series graphics card, the **New Hardware Found** dialog box appears.

3. Click **Driver from disk provided by hardware manufacturer**.

4. When Setup prompts you for the location of the driver, type D:\WIN9x to direct Setup to the INF file and then click **Finish** to install the driver.

5. When Setup has finished installing all the necessary files on your computer, it will prompt you to restart your computer. Click **Yes** to restart your computer and to complete Setup.
III. Windows 98

Drivers

Install Display Driver

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Drivers.

2. **Windows 98**: The Drivers box appears. Click **Install Display Driver** to install all the drivers and utilities into your computer. Setup will install the drivers in the following order: Display Driver (Direct3D and OpenGL Drivers), DirectX runtime libraries, and VGART driver. Just follow the on-screen instructions to complete the installation.

   **Windows 2000**: Setup will only copy the display drivers.

   **Windows NT 4.0**: SETUPNT.TXT will appear. Follow the instructions to install the display driver. You may refer to the installation procedures on page xx.

If you prefer to install the drivers individually, follow the steps on the following pages.
III. Windows 98

Install DirectX (Windows 98 only)

Microsoft DirectX allows 3D hardware acceleration support in Windows 98. For Software MPEG support in Windows 98, you must first install Microsoft DirectX, and then an MPEG-compliant video player.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Drivers.

2. The Drivers box appears. Click Install DirectX to select the DirectX version you want to install.

3. The installation program will automatically install the DirectX 7 runtime libraries into your system.

4. Setup will prompt when it has finished copying all the files to your computer. Click OK to finish the installation.

**WARNING!** Some games written for older DirectX versions may not work properly under DirectX 7. Make sure that your applications or games support DirectX 7 before installing the DirectX 7 runtime libraries. DirectX 7 currently cannot be uninstalled by regular means, such as outlined in III. Windows 98 | Uninstall Display Driver.
III. Windows 98

Install GART Driver (Windows 98 only)

The AGP GART Driver is used to support AGP functionality for the chipset on your PC’s motherboard. It is recommended to install the GART driver if it is newer than the one you have installed in your system. The GART driver is only necessary for an AGP graphics card.

**NOTE:** Installation dialogs are slightly different for each chipset. Follow the on-screen instructions to finish the GART driver installation. The succeeding steps assume that you are installing for an Intel chipset.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click **Drivers**.

2. The **Drivers** box appears. Click **Install GART Driver** to install AGP support for motherboards with Intel, AMD, VIA, SiS, or ALi chipsets.

3. The **AGP VGARTD Driver Detection** box appears with the chipset detected on your motherboard. Click **OK** to install the appropriate driver for your AGPset.
III. Windows 98

4. If you selected No..., on the previous screen before clicking OK, you will be presented with a selection of other drivers. Make your driver selection and click **Install**.

5. When the **Welcome** screen appears, click **Next** to continue.

6. Once the driver installation is finished, click **Finish**.
III. Windows 98

Install ASUS TWAIN Driver

ASUS TWAIN Driver is a frame capture driver for Adobe Photoshop®, an image editing software. With this driver, you can capture still images through Photoshop using the video input port of your card (Deluxe model only).

1. Insert the CD installation disc into your CD-ROM drive or double-click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Drivers.

2. The Drivers box appears. Click Install ASUS TWAIN Driver.

3. When the Welcome box appears, click Next to start copying the files. Setup automatically starts copying the necessary files to the default folder.

   To complete the installation, simply follow the on-screen instructions or prompts.
Uninstall Display Driver

If you want to update your display drivers or if you no longer need the AGP-V7700 display drivers, you can use one of the following procedures to completely uninstall the drivers from Windows 98 to save disk space.

Using the Autorun Screen
1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.
   
   Click Drivers.

2. Click Uninstall Display Driver and follow the on-screen directions.

Using Windows 98 Control Panel
1. Click Start, and then point to Settings.

2. Click Control Panel.

3. Double-click the Add/Remove Programs icon.

4. Click the Install/Uninstall tab.

5. Click ASUS V7700 Series Display Driver from the list.

6. Click Add/Remove.

7. The system will prompt you to restart your computer. Click Yes to restart.
III. Windows 98

Run ASUS VGA Live Update (Windows 98 only)

The ASUS VGA Live Update is a utility that allows you to update your VGA card’s BIOS and drivers. The use of this utility assumes that you are properly connected to the Internet through an Internet Service Provider (ISP).

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Drivers and when the Drivers box appears, click Run ASUS VGA LiveUpdate.

2. Select an update method from the drop-down list box and then click Next.
   • Update BIOS/Driver from the Internet lets you update the BIOS or driver from the Internet. The updating (running the flash utility or the installation program) will be done automatically.
   • Download BIOS/Driver from the Internet lets you download the BIOS or driver to a folder in your computer.

3. After you have selected your preferred update method, you will need to select an Internet site. Choose the site that is closest to you and then click Next or click Auto Select.

   Follow any on-screen instructions or prompts to complete setup.

   If you selected Download BIOS/Driver from the Internet, you will be prompted for a destination folder. Create or select an existing folder to save the file or files that you selected.
III. Windows 98

Install Acrobat Reader

Acrobat Reader is necessary for reading the PDF copy of this manual.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Utilities.

2. The Utilities box appears. Click Install Acrobat Reader.

3. When the Acrobat Reader x.x Setup box appears, click Next.

   To complete the installation, simply follow the on-screen instructions or prompts.
III. Windows 98

Install SmartDoctor

SmartDoctor is a utility that monitors the card’s graphic chip state, alerting users about abnormal events, such as a fan malfunction or chip overheat. Likewise, the utility "cools" down the graphic chip temperature when it is idle or returns it to its maximum capability when necessary.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Utilities.

2. The Utilities box appears. Click Install SmartDoctor.

   NOTE: If your graphics card is not equipped with a monitor IC, an error message warns you that monitor IC was not detected. The installation will abort. SmartDoctor works only with cards with a monitor IC.

3. When the Welcome box appears, click Next to start the installation.

To complete the installation, simply follow the on-screen instructions or prompts.
III. Windows 98

Install ASUS Tweak Utility

The ASUS Tweak Utility lets you control the core clock speed and the memory interface speed of your graphics card.

WARNING! Use this option with caution. Using this inappropriately may damage your card and cause your system to be unstable.

1. Insert the CD installation disc into your CD-ROM drive or double click the CD drive icon in My Computer to bring up the autorun screen or run Setup.exe in the root directory of your CD-ROM drive.

   Click Utilities.

2. The Utilities box appears. Click Install ASUS Tweak Utility

3. When the Welcome box appears, click Next.

   To complete the installation, simply follow the on-screen instructions or prompts.
III. Windows 98

Using the Utilities

ASUS TWAIN Interface (Windows 98 only)

TWAIN is a cross-platform interface for acquiring images captured by scanners, digital cameras, and frame grabbers. The ASUS TWAIN Driver is currently supported only when used with Adobe Photoshop® (see www.adobe.com for details). If you already have Photoshop installed and you chose to install the ASUS TWAIN Driver, you can use Photoshop to import a still image using the ASUS TWAIN interface installed.

NOTE: The following steps assume that you are already running Photoshop and that you have already connected a compatible and working capture device, such as a web cam, to your system.

Using the ASUS TWAIN Interface for the First Time

1. From the File menu, click Import and then Select TWAIN_32 Source to specify the capture option.

Select ASUS Frame Capture Source.

NOTE: You do not need to repeat this step for subsequent uses of the ASUS TWAIN module. If more than one TWAIN device is installed in your system and you want to switch devices, use Select TWAIN_32 Source command.

Importing an Image Using the ASUS TWAIN Interface

1. From the File menu, click Import and then TWAIN_32.
III. Windows 98

2. When the ASUS TWAIN Driver utility appears, click **Options** and then **Video Format**.

3. In the **Image Format** list of the ASUS Video Format dialog box, click **24 bit RGB**.

4. Click **Options** and then **Video Format** to select your video source. If desired or necessary, you may adjust the **Brightness**, **Contrast**, **Saturation**, and **Hue** of your image.

   You are now ready to capture.

5. To capture, click the capture button ![Capture Button](image) or click the **Capture** menu and then **Single Frame**.

**Other Options**

**Preferences** Menu: Click to adjust the background color of your image and other options.

- **Toggle preview video**: Click button or click the **Options** menu and then **Preview** to toggle between the preview video options. A pressed button (or a checked **Preview** command) indicates that the preview is on and vice-versa.

- **Toggle overlay video**: Click button or click the **Options** menu and then **Overlay** to toggle between the overlay video options. A pressed button (or a checked **overlay** command) indicates that the overlay preview is on and vice-versa.
ASUS SmartDoctor

ASUS SmartDoctor is designed to satisfy two major goals. One is to monitor the graphic chip status, alerting users about abnormal events, such as fan malfunction or chip overheat. The other, as the name “SmartDoctor” implies, is to “cool” down the graphic chip smartly when it is not necessary for it to be kept running at full speed.

**Functions**
- Monitors graphic chip temperature, fan speed and voltage
- Notifies users about irregular hardware events, such as temperature overheat, fan malfunction, and out-of-safe-range voltage.
- Forcibly cools down the graphic chip when the graphic chip’s temperature is over an acceptable temperature, to protect the graphic chip from overheat damage.
- Cools down the graphic chip’s temperature when it is idle, and restores it to its maximum capability once needed, thus smartly extending the graphic chip’s lifetime.
- Cools down the CPU’s temperature (for Windows 95/98/98 Second Edition only) to lengthen CPU lifetime.

**NOTE:** AGP bus VDDQ Voltage and AGP bus 3.3 Voltage should be supplied steadily by your motherboard, otherwise, your system will crash.
III. Windows 98

Advanced Setup
When you click the Setup button, the Advanced Setup dialog box appears.

The default setting of SmartDoctor is Run once and terminate, which means that SmartDoctor will run every time Windows starts and checks the graphic card’s status.

If your graphics card is working properly, SmartDoctor will just exit or terminate in 5 seconds.

If you want SmartDoctor to continue running in the background and to monitor your graphic card’s status, select Run and keep resident.

Dynamic Settings will become available when you select Run and keep resident.

- Monitoring polling time interval lets you specify the time intervals that SmartDoctor will take to check the graphic chip. The default setting is 5 seconds. You can choose a longer time interval value. SmartDoctor, however, will be less sensitive to graphic chip condition changes.

- Enable CPU cooling allows you to enable or disable the CPU cooling option. Enabling CPU cooling option will cool down the CPU’s temperature when SmartDoctor detects that CPU is idle. The CPU’s temperature will then drop.

  NOTE: If you have already installed any CPU cooling software in your system, you should just choose only one. Running more than one CPU cooling software at the same time is redundant.

  After CPU cooling is enabled, and when you run System Monitor in Programs—Accessories—System Tools to monitor CPU usage, you will find that CPU usage has reached its maximum, that is, 100%. Do not be alarmed—this is normal.

- Enable dynamic graphic cooling allows you to enable or disable the dynamic graphic cooling option. Enabling the graphic cooling option will cool down the graphic chip’s temperature when SmartDoctor detects that the graphic chip is idle.
III. Windows 98

- **Enable overheat protection** lets you forcibly cool down the graphic chip when temperature is over the tolerable range or value.

When you select **Run and keep resident** and then click **OK**, a dialog box appears to warn you of a possible graphic performance drop. This performance penalty is very slight and almost undetectable even under rigorous examination by benchmark programs.

![Warning dialog box](image)

Press **OK** to set your modifications or **Cancel** to retain the original settings.

**Abnormal Events**

When SmartDoctor senses that something is wrong with your card’s graphic chip, the message display region will display a detailed description of the error or trouble. The component in question will also have a flashing red value. If you enabled overheat protection in **Advanced Setup** dialog, SmartDoctor will cool down the graphic chip in time to protect it from possible overheat damage.

![Abnormal Events](image)
III. Windows 98

ASUS Tweak Utility

**WARNING!** Use the ASUS Tweak Utility with extreme caution and only if you are well acquainted with your display card. Using this inappropriately may damage your card, its components, and your system.

To run the ASUS Tweak Utility, click **Start** and point to **Programs, Asus, Tweaking Utilities**, and then click **Tweak**.

**Timing Adjustment**

**Timing Adjustment** lets you adjust the working frequency of the graphic engine and video memory.

**Graphics Speed**

**Engine**

Lets you adjust the working frequency of the graphic engine

**Memory**

Lets you adjust the working frequency of the video memory.

**Default**

Restores the settings to their defaults.

**Test settings**

Lets you test your settings.

**Use tweak settings on next startup**

Selecting this allows you to use your settings when Windows starts.
III. Windows 98

Tweak Safe Mode Recovery

**Timing Adjustment (Safe Mode)** lets you restore the working frequency of the graphic engine and video memory to their factory default settings. This mode is used when you encounter problems when starting or restarting Windows using your customized tweak settings.

*Using Tweak Safe Mode Recovery*

1. Restart Windows in safe mode. To start Windows in safe mode, hold the F8 key until the Windows Startup Menu appears. For some machines and Windows 98, you can use CTRL to bring up the Startup Menu. Enter the number for **Safe mode** and then press ENTER.

2. In Windows, click **Start** and point to **Programs, Asus, Tweaking Utilities**, and then click **Tweak Safe Mode Recovery**.

3. The **ASUS Tweak Safe Mode Properties** box appears. Click the appropriate settings.

**Timing Adjustment (Safe Mode)**

Select the **Clear tweak settings and use factory default** box to change back the timing adjustment settings to their factory defaults and then click **OK** to restart Windows properly.
III. Windows 98

ASUS Control Panel
(Windows 9x/Windows 2000 only)

After installation of the display drivers, you will find an ASUS icon on the taskbar’s status area. Clicking or right-clicking this icon opens the ASUS Control Panel, showing a menu composed of shortcuts of the graphics board’s enhanced and other functions.

NOTE: Instead of clicking the ASUS Control Panel icon, you may right-click the Windows95/98/2000 desktop, click Properties, and then click Settings. Under Windows98/2000, click Advanced after clicking Settings. Click the appropriate tab to change your display settings.

Refresh Rate

Refresh Rate lets you change the refresh rate of your current screen resolution.

WARNING! Be sure that the refresh rate that you select is supported by your monitor. Selecting a refresh rate that is beyond your monitor’s specification may damage it. Press ESC to restore your original settings in case of problems.

1. Click/right-click the ASUS Control Panel icon, point to Refresh Rate, and then click the desired refresh rate.

2. The system will prompt you whether you want to keep the setting you just selected. Click OK to keep the setting, otherwise, click Cancel or press ESC.
III.  Windows 98

More Resolution

More Resolution lets you change the screen resolution of your monitor.

1. Click/right-click the ASUS Control Panel icon, point to More Resolution, and then click the desired screen resolution. The system will automatically set the resolution selected without restarting your computer.

WINDOWS95 USERS: You will be prompted to restart your computer if you select a screen resolution with a different color depth, for example, from 800x600 HiColor to 800x600 TrueColor. Click OK to restart your computer to make the change.

Information

Information lists the relevant information about your card. Aside from this, it has links to the ASUSTeK COMPUTER, INC. web site for updated information about the graphics board, latest drivers, and other information.
III. Windows 98

Color

Color allows you to make color adjustments, such as brightness, contrast, and gamma values for each or all of the RGB colors. These adjustments can be made for Desktop, D3D/Game, Video, and OpenGL. The color settings of Desktop, D3D/Game, and OpenGL are not adjustable under 8-bit color depth.

**Desktop**

Desktop lets you adjust the color of your Windows desktop.

**D3D/Game**

D3D/Game lets you make your favorite color settings for D3D games.

**Video**

Video lets you make your favorite color settings for videos.

**OpenGL**

OpenGL lets you make your favorite color settings for OpenGL applications.
III. Windows 98

General Functions

**Brightness / Contrast / Gamma**

Brightness / Contrast / Gamma sliders let you calibrate the brightness, contrast, and gamma output of your display card.

**Desktop**

Changes to your color settings are shown immediately on your monitor. You may change the preview picture by clicking Load from the Desktop box.

**D3D/Game / OpenGL**

Changes to your color settings are shown immediately on your monitor.

**Brightness / Contrast / Hue / Saturation**

Brightness / Contrast / Hue / Saturation sliders let you calibrate the brightness, contrast, hue, and saturation output of your display card.

**Video**

Changes to your settings can be viewed on the displayed picture (shown as race horses).

**Color Spline**

Color Spline shows how each (R, G, or B) or all channels are distributed when you move the Brightness, Contrast, or Gamma slider to make your adjustments. You can adjust all channels at once (All) or individual channels (R, G, or B).

**Scheme**

Scheme lists schemes that you can use to change the appearance of many screen elements simultaneously. You can use existing schemes, or create and save your own scheme by saving your current settings, or delete unwanted schemes. You may want to save a scheme that you created for some special situations, such as when you want to use the same settings when playing a certain game or a movie.
III. Windows 98

Important Notes

**D3D/Game**
The color settings of **D3D/Game** take effect only when you are playing a **full-screen** DirectDraw/Direct3D game.

**Video**
Only one overlay is allowed at a time with either ASUS AGP-V7700. That is, when you click **Video** first and then run your favorite video player, you can only see the adjustments you made to the settings in the preview window because the video player cannot use the hardware acceleration function (overlay). On the other hand, if you run your video player first before opening **Video**, the preview window will show a warning message. The message may also appear when you click **Video** and the dialog box is on the wrong monitor in a Windows 98 multiple display environment.
III. Windows 98

Display

Display lets you make monitor adjustments, such as position, size, and refresh rate.

**WARNING!** Adjusting position or size, especially refresh rate is a highly dangerous operation. Selecting a value that is beyond your monitor’s specification may damage it. **Press ESC to restore your original settings in case of problems.**

VGA

Adjustment
- **Position** sets the screen position
- **Size** sets the screen size

Synchronization
Adjusts the synchronization polarity settings

Disable Monitor Check
Lets you disable the specification check of your monitor. That is, you may select all the resolutions and refresh rates that the VGA card can support.

*Note:* Choosing a resolution or refresh rate beyond the monitor specifications may damage your monitor.

Change current refresh rate
(Windows 9x only)
Displays the Change current refresh rate box to let you customize a new refresh rate.

**To change the current refresh rate**
1. Click **Change current refresh rate**.
2. In the **Refresh rate** list under Change current refresh rate, click the nearest default refresh rate and then adjust the **Edit refresh rate** slider to the rate you want, click **Test** and then click **YES** when prompted to add the new refresh rate into the list. Otherwise, the original refresh rate will be restored.

Load default
Restores the settings to their defaults.
III. Windows 98

Change refresh rate
Displays the Change refresh rate box to let you change the refresh rate of any screen resolution.

GDI (for Windows 9x only)
GDI lets you change the refresh rate of the Windows desktop.

To change the refresh rate
1. Click Change refresh rate.
2. In the Refresh Rate list under the GDI tab, select the refresh rate you want to use. A Test button appears to let you test the selected refresh rate and resolution combination. Click YES when prompted whether to keep the new refresh rate. Otherwise, the original refresh rate will be restored.

DirectDraw
DirectDraw lets you change the refresh rate of DirectDraw. It is most useful when you are playing a full-screen game.

To change the refresh rate
1. Click Change refresh rate.
2. In the Refresh Rate list under the DirectDraw tab, select the refresh rate you want to use.
TV

**NOTE:** This tab is not available with the Pure model.

Position
Sets the screen position.

Standard
Sets the TV signal format, for example, PAL or NTSC.

Output type
Displays the connection status of composite and S-Video.

Scan type
Sets the scan type of the TV display.

Black Level
Sets the brightness of the TV display.

Contrast
Sets the contrast of the TV display.

Flicker Filter
Sets the anti-flicker effect.
Advanced

Advanced provides some advanced settings for the ASUS VR-100G 3D Glasses (setting is available only with the ASUS Deluxe model or models with the ASUS VR-100 Optional Upgrade Kit) and Direct3D and OpenGL, which are software interfaces for your ASUS V7700 Series graphics cards.

Direct3D VR

VR Effect

Enable Stereoscopic Mode
When selected, this enables you to use the stereoscopic mode when playing games or watching 3D videos. This mode is available only with the ASUS Deluxe models or models with the ASUS VR-100 Optional Upgrade Kit.

NOTE: You must quit all running DirectDraw/ Direct3D applications and then restart them for this option to take effect.

Eyes
Distance between both eyes. Adjust this to bring objects into focus.

Distance
Distance between foreground objects and eyes. When set to a small value, eye fatigue may occur.

Embossment
The effect to make objects virtually pop out of the screen. When set to a too high value, eye fatigue may occur.

Background / Foreground
Background is the distance between background and eyes while Foreground is the distance between foreground and eyes. These two options form a range and allow you to adjust the degree of stereoscopic effect between this range. Several current games set their Foreground to 60 and Background to 100.

Mode

Line Interleave
Select for better compatibility with most monitors. Stereoscopic visual quality, however, will be poor because only half the number of vertical lines are generated with this mode.

Page Flipping
Select for the best stereoscopic visual quality. Your monitor must be able to support the high frequency (at least 100Hz) necessary for this mode.

Refresh Rate
To prevent eye discomfort and fatigue, high refresh rates are preferred. Some monitors, however, may not be able to support a high refresh rate. Make sure that your monitor supports a selected refresh rate; otherwise, your monitor may become unstable, for example, a blank screen may occur.

Blind
Lets you discard or crop the unwanted areas of your display. Setting this to 0 will not discard any of the display area.

Load Default
Restores the settings to their defaults.
III. Windows 98

**IMPORTANT:** Before enabling stereoscopic mode and using your stereoscopic or 3D glasses (ASUS VR-100G), make sure that your monitor can support the selected refresh rate (interlaced mode) under the following display modes:

- **16 bits:** 640 x 480, 800 x 600, 960 x 720, 1024 x 768, 1152 x 864
- **32 bits:** 640 x 480, 800 x 600

**WARNING!** To prevent discomfort and eye fatigue when using your stereoscopic or 3D glasses, DO NOT try to use your 3D glasses for an extended period of time. Take frequent short breaks to give your muscles and eyes a chance to rest by taking off your 3D glasses and then looking up and focusing on distant objects.

On Screen Display (ASUS OSD) (Not available on Windows 2000)

**Enable OSD**

When selected, this lets you to adjust onscreen the settings of your 3D glasses and display card when playing games or watching 3D videos. These settings include Eyes, Distance, Embossment, Background, Foreground, Blind, Brightness, Contrast, and Gamma. See III. Windows 98 | Advanced for a description of the 3D glasses settings and III. Windows 98 | Color for a description of the display settings.

Use the UP or DOWN arrow keys on your keyboard to select a setting that you want to change or adjust and the PLUS or MINUS keys to move or drag the slider.

To restore the settings to their defaults, press the HOME key.

To close the onscreen display, press the END key.

![Hotkey](MotoRacer_2.png)

*Moto Racer 2™ is copyright © 1999 by Electronic Arts.

**Hotkey**

This lets you assign hot keys to enable onscreen display or OSD. To use this function, select **Enable OSD**. You may want to change the default hot key (CTRL + ALT + O) when it conflicts with hot keys of certain games, video players, or Windows programs.

**To change the default hot keys**

1. With your mouse cursor in the **Hotkey** box, press the hot key combination of your choice (you can only define CTRL + ALT key combinations). Hot keys automatically include CTRL+ALT. Press any valid key (you cannot use ESC, ENTER, TAB, SPACEBAR, PRINT SCREEN, or BACKSPACE) you want to add to this combination. For example, to define the hot key combination CTRL+ALT+D, press D.

**NOTE:** The hot keys will be available only if you selected the **Enable OSD** check box and if you have either an ASUS Deluxe model or a model with the ASUS VR-100 Optional Upgrade Kit installed.
III. Windows 98

Direct3D

Performance and Compatibility Options

Enable fog table emulation
Some old games do not correctly query the D3D hardware capabilities and expect table fog support. Choosing this option will ensure that such games will run properly.

Adjust Z-buffer depth to rendering depth if unequal
This option forces the hardware to automatically adjust the depth of its Z-buffer to the depth that the application requests. Normally, you will want to keep this option enabled, unless your work absolutely requires a specific Z-buffer depth.

Enable alternate depth buffering technique
This option lets the hardware use a different mechanism for depth buffering in 16-bit applications. Enabling this setting can produce higher quality rendering of 3D images.
III. Windows 98

Mipmapping Options

Mipmap levels automatically generated
This option lets the hardware automatically generate mipmaps to increase the efficiency of texture transfers across the bus and provide higher application performance.

Auto-mipmap method
This option lets you choose the auto-mipmap method. Choose bilinear method for a generally improved performance or anisotropic method for a generally higher quality image.

Mipmap detail level
This option lets you adjust the level of detail bias for mipmaps. A lower bias will increase the application performance.

Command Buffer Location

Command Buffer Location lets you choose the location of the command buffer. Default setting is Strict AGP.

Strict AGP
This option forces all the command buffer into the AGP memory. Choose for best performance.

PCI
This option forces the command buffer to be created into the PCI memory. If you are experiencing stability problems with your system (especially with some Socket 7 motherboards), choose this option for better compatibility.

PCI with reduced heap
This option forces the command buffer to be created into the PCI memory. This, however, also reduces the AGP heap size by an amount equal to the size of the command buffer. If you are experiencing stability problems with your system (especially with some Socket 7 motherboards), choose this option for best compatibility. Performance is, however, poorer using this option compared with the PCI option.
### III. Windows 98

**More Options**

#### Texel Alignment

Changing these values will change where the texel origin is defined. The default values conform to the Direct3D specifications. Some software may expect the texel origin to be defined elsewhere. The image quality of such applications will improve if the texel origin is redefined.

![Texel Alignment](image)

#### PCI Texture Memory Size

**NOTE:** This setting applies only to PCI display adapters or to AGP display adapters running in PCI compatibility mode.

**PCI Texture Memory Size** lets you set the amount of system memory for texture storage.

![PCI Texture Memory Size](image)

Clicking the up arrow increases the memory size while clicking the down arrow decreases the size of system memory for textures. The maximum amount of system memory for texture storage depends on the physical memory installed on your system.

#### Turn off V-SYNC waiting

**Turn off V-SYNC waiting** lets an image to be immediately rendered to the screen without waiting to be synchronized with the vertical retrace of the monitor. This option allows for frame rates higher than the refresh rate of your monitor. This may, however, produce visual artifacts and tearing, resulting in reduced image quality.

![Turn off V-SYNC waiting](image)

#### Pre-Rendering

**Maximum pre-render frames** allows you to limit the number of frames the CPU can prepare before they are processed by the graphics chip when vertical sync is turned off. Reduce this value if you experience, while playing games, a noticeable delay in the response of the input devices connected to your computer.

![Pre-Rendering](image)
III. Windows 98

**OpenGL VR**

**VR Effect**

**Enable Stereoscopic Mode**
When selected, this enables you to use the stereoscopic mode when running OpenGL 3D applications AND GAMES. This mode is available only with the ASUS Deluxe models or models with the ASUS VR-100 Optional Upgrade Kit.

**Eyes**
Distance between both eyes. Adjust this to bring objects into focus.

**View Angle**
The angle by which your two viewing directions intersect. To change this virtual viewing depth, adjust this value.

**Embossment**
The effect to make objects virtually pop out of the screen. This is done by setting this field to a high value. When set to a too high value, eye fatigue or discomfort may occur due to focusing problems. To achieve a better stereoscopic visual quality, set **Embossment** in conjunction with **View Angle**.

**Mode**

**Line Interleave**
Select for better compatibility with most monitors. Stereoscopic visual quality, however, will be poor because only half the number of vertical lines are generated with this mode.

**Page Flipping**
Select for the best stereoscopic visual quality. Your monitor must be able to support the high frequency (at least 100Hz) necessary for this mode.

**Refresh Rate**
To prevent eye discomfort and fatigue, high refresh rates are preferred. Some monitors, however, may not be able to support a high refresh rate. Make sure that your monitor supports a selected refresh rate; otherwise, your monitor may become unstable, for example, a blank screen may occur.

**IMPORTANT:** Before enabling OpenGL stereoscopic mode and using your stereoscopic or 3D glasses (ASUS VR-100G), make sure that you select a high resolution. The equivalent Stereo Mode resolution of a particular resolution is lower, thus:

- **16 bits:**
  - 2048x1536 → 1024x768 Stereo Mode
  - 1280x960 → 640x480 Stereo Mode
  - 1280x1024 → 640x480 Stereo Mode
  - 1600x900 → 800x600 Stereo Mode
  - 1600x1200 → 800x600 Stereo Mode

- **32 bits:**
  - 2048x1536 → 1024x768 Stereo Mode
  - 1280x960 → 640x480 Stereo Mode
  - 1280x1024 → 640x480 Stereo Mode
  - 1600x900 → 800x600 Stereo Mode
  - 1600x1200 → 800x600 Stereo Mode
On Screen Display (OpenGL OSD)

Enable OSD
When selected, this lets you to adjust onscreen the settings of your 3D glasses and display card when playing games or watching 3D videos. These settings include Eyes, View Angle, Embossment, Brightness, Contrast, and Gamma. See III. Windows 98 | Advanced for a description of the display settings.

Use the UP or DOWN arrow keys on your keyboard to select a setting that you want to change or adjust and the PLUS or MINUS keys to move or drag the slider.

To restore the settings to their defaults, press the HOME key.

To close the onscreen display, press the END key.

Hotkey
This lets you assign hot keys to enable onscreen display or OSD. To use this function, select Enable OSD. You may want to change the default hot key (CTRL + ALT + O) when it conflicts with hot keys of certain games, video players, or Windows programs.

To change the default hot keys

1. With your mouse cursor in the Hotkey box, press the hot key combination of your choice (you can only define CTRL + ALT key combinations). Hot keys automatically include CTRL + ALT. Press any valid key (you cannot use ESC, ENTER, TAB, SPACEBAR, PRINT SCREEN, or BACKSPACE) you want to add to this combination. For example, to define the hot key combination CTRL + ALT + D, press D.

NOTE: The hot keys will be available only if you selected the Enable OSD check box and if you have either an ASUS Deluxe model or a model with the ASUS VR-100 Optional Upgrade Kit installed.
III. Windows 98

OpenGL

**Performance and Compatibility Options**

- **Enable buffer region extension**
  This option allows the drivers to use the OpenGL extension GL_KTX_buffer_region.

- **Allow the dual planes extension to use local video memory**
  This option allows the use of local video memory when the GL_KTX_buffer_region extension is enabled.

- **Use fast linear-mipmap-linear filtering**
  This option allows increased application performance at the expense of some image quality loss. In many cases, the loss of image quality may not be noticeable.

- **Enable anisotropic filtering**
  This option allows OpenGL to use anisotropic filtering for improved image quality.

- **Enable alternate depth buffering technique**
  This option lets the hardware use a different mechanism for depth buffering in 16-bit applications. Enabling this setting produces higher quality rendering of 3D images.
III. Windows 98

Default color depth for textures

Default color depth for textures determines whether textures of a specific color depth should be used by default in OpenGL applications. Options are Use desktop color depth (default), Always use 16 bpp, and Always use 32 bpp.

Buffer flipping mode

Buffer flipping mode determines the buffer flipping mode for full-screen OpenGL applications. Options are Auto-select (default), Use block transfer, and Use page flip.

Vertical sync

Vertical sync lets you specify how vertical sync is handled in OpenGL. Options are Always off (default), Off by default, On by default.

Maximum system memory (MB) for textures in PCI mode

Maximum system memory (MB) for textures in PCI mode lets you set the amount of system memory for texture storage. Clicking the up arrow increases the memory size while clicking the down arrow decreases the size of system memory for textures. The maximum amount of system memory for texture storage depends on the physical memory installed on your system.

NOTE: This setting applies only to PCI display adapters or to AGP display adapters running in PCI compatibility mode.
Monitor Timing lets you select the proper timing mode for your monitor.

**Auto-Detect (let Windows determine the proper mode)**
This option allows Windows to receive the proper timing information directly from the monitor itself. This is the default setting.

**NOTE:** Some older monitors may not support this feature.

**General Timing Formula (GTF)**
GTF is a standard used by most new hardware.

**Discrete Monitor Timings (DMT)**
DMT is an older standard still in use on some hardware. Select this option if your hardware requires DMT.
ASUS VR PictureViewer (optional)

ASUS VR PictureViewer lets you view stereo images, size your stereo image, set the VR effect of your 3D glasses (ASUS VR-100G), and test your 3D glasses’ functionality.

To run ASUS VR PictureViewer, click or right-click the ASUS Control Panel icon (see III. Windows 98 ASUS Control Panel) on the taskbar’s status area to display the ASUS Control Panel, point to VR PictureViewer, and then click it.

Opening or Displaying a Stereoscopic or 3D File

1. Click the VR Effect menu and then click VR On to enable stereoscopic display.
III. Windows 98

2. Click the File menu and then click Open to select a file. Select the file from the Open dialog box or select another folder and then click Open. The 3D image appears on the VrViewer main window (see preceding page for an opened 3D image file. Note that the 3D effect is not shown in this picture).

Changing the View

1. Click the Zoom menu and then click the desired zoom percentage.

Testing the 3D Glasses

1. Click the Test 3D glasses and then follow the onscreen instructions.
ASUS StereoTV (optional)
(Windows 9x only)

**NOTE:** The ASUS StereoTV utility can only be used with the Deluxe model.

It can be used to view stereo video images with the optional 3D glasses (ASUS VR-100G) using your monitor or TV as screen from traditional consumer devices, such as videocassette players, camcorders, digital cameras, and laser disc players through the onboard RCA or SVHS VIDEO-IN connectors.

**NOTE:** You should already have installed DirectX 7 or higher to use ASUS StereoTV (see III. Windows 98 Install DirectX)

To run StereoTV, right-click the ASUS Control Panel icon on the taskbar’s status area to display the ASUS Control Panel, point to StereoTV, and then click it.

**ASUS VR MoviePlayer**

![ASUS VR MoviePlayer interface]

**Buttons and Functions**

**Channel Buttons**
Clicking + selects the next higher channel while pressing - selects the next lower channel.

**Volume Buttons**
Clicking + increases the volume while pressing - decreases the volume.

**Window Size Buttons**
Clicking + increases the window size while pressing - decreases the window size.

**Stereo Setting**
Use this button to toggle between non-stereoscopic and stereoscopic mode.

**Image Setting**
Use this button to view correctly a stereoscopic image. For example, with a space inverted pseudoscopic spatial image, where the background appears in front and the foreground in the back. (Hotkey: R).
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**Channel Setting**
Use this button to select an appropriate cable standard for your video system.

**IMPORTANT!** Be sure that the system and standard of the country where you will be installing your card is set appropriately. For example, you should have the NTSC model if you plan to use your card in countries with NTSC systems, PAL-BGHI model in countries with PAL-BGHI systems, or PAL-4.43 model in countries with PAL-4.43 systems.

**Video Setting**
Use this button to select the video format (Options: NTSC, PAL-BGHI, PAL-4.43) and video source (Options: Composite, Video).

**Minimize Button**
Clicking this button minimizes the ASUS VR MoviePlayer.

**Exit Button**
Clicking this button closes StereoTV.
IV. Windows NT 4.0

Install Display Driver

**WARNING!** Before installing the display driver in Windows NT 4.0, make sure that you have installed Windows NT 4.0 Service Pack 3 or later, to take full advantage of the ASUS AGP-V7700 AGP features. (You may download service packs at http://www.microsoft.com/ntworkstation/downloads.)

**NOTE:** The following steps assume your CD-ROM drive letter is D.

Installation Procedures

1. Start Windows NT, switch display properties to VGA mode (16 colors, 640 x 480 pixels), then restart your computer to make the change.
2. After your computer restarts, right-click the desktop and click **Properties**.
3. Click the **Settings** tab.
4. Select **Change Display Type**.
5. Select **Adapter Type** and click **Change**.
6. Click **Have Disk**.
7. Insert the CD installation disc.
8. Type `D:\NT40` or click **Browse** to select the path of the display driver for Windows NT. Click **OK**.
9. Select **ASUS V7700** and then click **OK**.
10. Windows NT will once again prompt for confirmation. All appropriate files are then copied to the hard disk. When all files are copied, go back to the **Display Properties** box by clicking **Close**. Click **Apply**.
11. The **System Settings Change** dialog box is displayed. Click **Yes** to restart Windows.
12. Windows NT will restart with the default settings. The Display applet will appear to allow for mode selection.
## V. Resolution Table

<table>
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<td>8bpp = 256 colors</td>
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## VI. Troubleshooting

<table>
<thead>
<tr>
<th>Description</th>
<th>Recommended Action</th>
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</table>
| After installation and re-starting, Windows 95/98 informs me that the display setting is still incorrect. | • Make sure the “Assign IRQ to VGA” option is enabled in the BIOS.  
• Check if there is enough IRQ for VGA.  
• Uninstall the driver, restart, and reinstall the driver.  
• It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration. |
| My monitor is not capable of high resolution or refresh rate.            | • Windows 95 is not OSR2.1 or later.  
• DirectX version is not 6.0 or later.  
• You have not installed appropriate drivers for the AGP chipset. (e.g. VGARTD.VXD for Intel 440LX).  
• Incorrect BIOS setting. BIOS must support at least 64MB for AGP aperture size. |
| DirectX or the other applications report no AGP memory available.      | • 3D works only in 16- or 32-bit color depth. Switch your color depth display mode to 16-bit (high color) or 32-bit (true color).  
• Check necessary libraries, such as DirectX or OpenGL.  
• Try to switch to a lower resolution. |
| Games or applications report “No 3D acceleration hardware found.”     | • You may be using a motherboard with an Aladdin IV AGPset. To get the best compatibility, the display card uses AGP Bus Master mode instead of AGP execute mode for motherboards using this AGPset. |
| I cannot enable AGP memory or run I-Base test.                         | • You must install DirectX 6 or later so that your player can take advantage of the hardware acceleration mode (DirectDraw).  
• Try to switch to a lower resolution, color depth, or refresh rate. Switching to a lower mode allows your player to use hardware acceleration mode.  
• Switch dual view mode to VGA or TV mode. |
| My MPEG player displays bad quality video clips.                       | • VideoSecurity currently only supports S-Video or Composite CCDs. Any device used must be connected to an ASUS video card. |
| I can't use VideoSecurity with my USB CCD or IEEE 1394 CCD.            | • This is a very important issue when you decide to use VideoSecurity with the “never stop” option. You must be aware of the free space of your hard disk—it must be enough for storing temporary files in the current working directory. If disk space is exhausted, VideoSecurity will not store any information and give you a warning message. |
| I am using Video Security and it seems my hard disk space is almost exhausted. | |
VI. Troubleshooting

I am using VideoSecurity and I set the password option. I have forgotten my password, though. Is there a way to recover my password?

The only way to remove password protection is to recall the original password that you assigned. The password protection is still active even when you uninstall VideoSecurity and install a new copy. Make sure that the password that you assigned can be easily remembered. You may write down your password and store it in a safe place.
L8400 Series
Compact Professional Notebook PC
• 14.1” TFT Color Display
• 450MHz to 700MHz+
• 64MB to 192MB Memory
• 2X AGP 3D w/8MB VRAM
• 100MHz Processor Side Bus

M8300/8200 Series
Thin & Light Convertible Notebook PC
• 13.3” or 12.1” TFT Color Display
• 366MHz to 650MHz+
• 64MB to 192MB Memory
• Supports Two Hard Drives

L7300/7200 Series
All-in-One Compact Notebook PC
• 13.3” or 12.1” TFT Color Display
• 366MHz to 650MHz+
• 64MB to 192MB Memory

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Barebone Servers

<table>
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<th>PC100 ECC Max. Memory (GB)</th>
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</table>

* Three 1.6-inch or five 1-inch SCA-2 SCSI hard drives
** Eight 1.6-inch or 1-inch SCSI hard drives

Mid-Range Servers
AP6000
AP7500
AP8000

Value Servers
AP2000
AP2500
AP3000

Group Servers
AP100
AP200

Visit www.asus.com for updated specifications
ASUS AR1000 RAID Sub-system
with DA3000 SCSI-to-SCSI RAID Controller

- Supports 5x86 RAID processor and two 72-pin SIMM sockets for up to 128MB cache memory
- Supports three Ultra2 SCSI channels; up to 80MB/sec data transfer rate
- Supports multiple Host/Drive channel capacity
- Redundant controller capacity
- Supports non-RAID, RAID levels 0, 1, 0+1, 3, 5
- On-line failure drive rebuilding
- Automatic rebuilding — supports local/global spare drive
- On-line expansion capacity
- Supports SAF-TE (SCSI Accessed Fault-Tolerant Enclosure) feature
- Provides LCD panel and RS-232 port to configure RAID
- Ten 1.0” or six 1.6” Ultra2 SCSI SCA-2 hot-swappable drive bays
- 19" rack mountable (height: 5U)
- LED for hard disk power and working status
- Two 8cm system fans and four 6cm drive fans
- Aluminum disk arrays for easy heat dissipation
- 350W redundant power supply

ASUS PCI-DA2100/2200 Series SCSI RAID Card

- PCI-DA2100 series support 4x86 DX4-100 processor
- PCI-DA2200 series support 5x86-133 processor
- One 72-pin SIMM socket supports up to 128MB cache memory
- RAID levels 0, 0+1, 3, 5, non-RAID
- PCI-DA2100A supports Ultra Wide SCSI interface and dual channels
- PCI-DA2200A supports Ultra2 SCSI interface and single channel
- PCI-DA2200B supports Ultra2 SCSI interface and dual channels
- Automatic bad sector reassignment
- Supports both global and local spare drive operation
- Background rebuilding
- PCI rev. 2.1 compliant
- Up to 8 logical drives and 8 partitions per logical drive; number of drives for each logical drive has no limitation

Visit www.asus.com for updated specifications
8x DVD-ROM Drive

- Industry-leading performance for even the most demanding applications
- Maximum transfer rate: 8X DVD-ROM / 40X CD-ROM
- High speed digital audio extraction
- Supports UltraDMA/33 transfer mode
- Complies with MPC3 standard
- Supports Multi-Read function

Ultra-Fast CD-ROM

- Supports high speed CD-Audio playback
- Supports high speed digital audio extraction
- Supports UltraDMA/33 transfer mode
- Compatible with all CD formats
- Supports multi-read function (CD-R/CD-RW)

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